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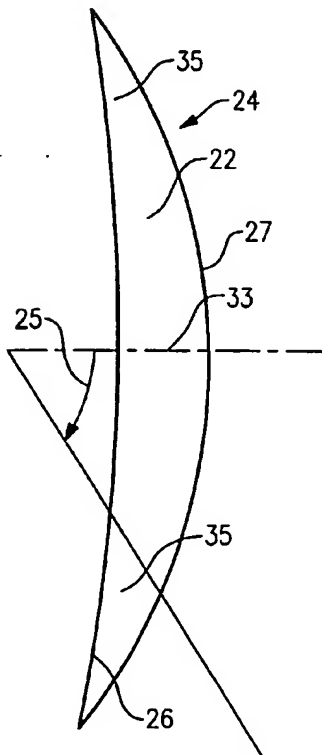
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GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
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MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
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[Continued on next page]

(54) Title: ASPHERIC INTRAOCULAR LENS



(57) Abstract: An intraocular lens (24) for placement into the anterior chamber of a human eye having an optic (22) with a central axis (33), an anterior surface (27) and a posterior surface (26). At least one of the surfaces is a rotationally symmetric shaped surface with a center of curvature on the central axis and an aspheric portion (35) formed in a peripheral area of the spherically shaped surface. An attachment mechanism fastens the intraocular lens between the iris and the cornea.

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KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Declaration under Rule 4.17:

- as to the identity of the inventor (Rule 4.17(i)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM,

INTERNATIONAL SEARCH REPORT

PCT/US2004/009737

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 A61F2/16 G02C7/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61F G02C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 019 098 A (MERCIER JEAN-LOUIS) 28 May 1991 (1991-05-28) column 3, line 35 - column 4, line 36 column 6, line 4 - column 6, line 10 column 6, line 35 - column 6, line 40; figures 1-3	10-19
X	US 4 277 851 A (CHOYCE DAVID P) 14 July 1981 (1981-07-14) column 2, line 3 - column 2, line 6 column 2, line 58 - column 2, line 65; figures 3-5	10 11-15, 17
A	WO 92/20302 A (WORST JAN GERBEN FRANS) 26 November 1992 (1992-11-26) page 7, line 10 - page 7, line 20; claims 1-3, 7; figures 4, 5, 7	10-18

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

30 September 2004

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08/10/2004

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Merté, B

INTERNATIONAL SEARCH REPORT

PCT/US2004/009737

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 1-9
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery; the step "placing an intraocular lens into the anterior chamber" is highly invasive and has to be performed by an ocular surgeon.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

PCT/US2004/009737

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5019098	A	28-05-1991	FR 2647227 A1	23-11-1990
			DE 69002386 D1	02-09-1993
			DE 69002386 T2	13-01-1994
			EP 0398813 A1	22-11-1990
			JP 3011315 A	18-01-1991
US 4277851	A	14-07-1981	GB 1582657 A	14-01-1981
			JP 1186100 C	20-01-1984
			JP 54086996 A	10-07-1979
			JP 58015142 B	24-03-1983
WO 9220302	A	26-11-1992	US 5192319 A	09-03-1993
			AU 660688 B2	06-07-1995
			AU 1976392 A	30-12-1992
			CA 2109590 A1	21-01-1993
			DE 69215672 D1	16-01-1997
			DE 69215672 T2	12-06-1997
			EP 0585362 A1	09-03-1994
			WO 9220302 A1	26-11-1992

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